

REMARKS

Claims 9-14 were previously pending in this application. By this amendment, Applicant is canceling claims 12 and 14 without prejudice or disclaimer. Claims 9-11 and 13 have been amended sole for clarity and not for any substantial reason relating to patentability. New claims 15 - 30 have been added to further define Applicant's contribution to the art. As a result claims 9-11, 13 and 15 - 33 are pending for examination with claims 9, 20 and 27 being independent claims. No new matter has been added. The application as presented is believed to be in condition for allowance.

Rejections Under 35 U.S.C. §103

Claims 9-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,169,761 to Marcoccia et al. (hereinafter Marcoccia) in view of U.S. Patent No. 5,991,279 to Haugli et al. (hereinafter Haugli). Applicant respectfully traverses this rejection.

Claims 12 and 14 have been canceled. Therefore, the rejection is moot with respect to claims 12 and 14.

Marcoccia discloses a spread spectrum frequency hopping radio system comprising a number of transceivers that each include an outdoor unit and an indoor unit (col. 2, lines 3-45). According to Marcoccia, the transceivers communicate with one another in a two-way link by frequency hopping among pseudorandomly ordered frequency channels with a specified dwell time of about but not more than 400 milliseconds on each channel (col. 4, lines 35-39). Referring to FIG. 1, Marcoccia further discloses that a coaxial cable 46 carries the transmit IF channel signal from the indoor unit 24 to the outdoor unit 23, and that another coaxial cable 47 carries the receive IF channel signal from the outdoor unit 24 to the indoor unit 24. Thus, Marcoccia discloses transmitting only IF signals over coaxial cables between the indoor and outdoor units.

Haugli is directed to a two-way packet data communication system for providing communication between a control station, an earth station in a satellite-based system, and a plurality of widely dispersed remote terminals (col. 1, lines 10-15). Referring to FIG. 2, Haugli discloses that a portion of the transmission energy relayed by the geostationary

satellite is captured by antenna 40 of the antenna unit 47, bandpass filtered, amplified and transmitted via coaxial cable 48 to the main electronics unit 50 (col. 12, lines 1-8). In addition, Haugli discloses that an Tx/Rx sense module 46 senses a DC signal provided on the coaxial cable 48 (provided from the Tx/Rx control module 51) and turns on either the transmit amplifier 45 or receive amplifier 42 as determined by the sensed DC level on the coaxial cable 48 (col. 12, lines 38-42). Thus, Haugli discloses, in a satellite-bases communication system, providing RF and DC signals over a coaxial cable.

In the Office Action, the Examiner states that Marcoccia discloses an indoor unit 24 and an outdoor unit 23 coupled by a coaxial cable 46 for transmitting power, control and RF signals between the indoor and outdoor units. Applicant respectfully disagrees. As discussed above, Marcoccia discloses transmitting IF signals between the indoor and outdoor units over coaxial cables – one coaxial cable for transmitted IF signals and one coaxial cable for received IF signals. Marcoccia makes absolutely no mention of transmitting control or power signals over any coaxial cable between the indoor and outdoor units, and specifically does not disclose or suggest sending power or control signals over the same coaxial cables used to transmit the IF signals between the indoor and outdoor units.

The Examiner also states that Haugli discloses a wireless communication system comprising an indoor unit 50 and an outdoor unit 47 coupled by a single coaxial cable 48 for transmitting power, control and RF signals between the indoor and outdoor units through the coaxial cable. Again, Applicant respectfully disagrees. Firstly, Haugli does not specify that the main electronics unit 50 is an “indoor unit” ^{not reliable} nor that the antenna unit 47 is an “outdoor unit” ^{not reliable} as stated in the Office Action. Furthermore, Haugli does not disclose transmitting power, control and RF signals across the coaxial cable 48. Rather, Haugli discloses transmitting RF signals and DC signals across the coaxial cable. Although Haugli does not expressly mention that the DC signals are control signals, it follows that they are control signals, not power signals, because Haugli states that the Tx/Rx sense module 46 senses the DC signal provided on the coaxial cable 48 and turns on either the transmit amplifier 45 or receive amplifier 42 as determined by the sensed DC level on the coaxial cable 48.

The proposed combination of Marcoccia and Haugli suggested in the Office Action is improper for lack of motivation to combine the references. In addition, even if one were to combine Marcoccia and Haugli as suggested, the resulting combination does not arrive at Applicant's claimed invention.

The law is clear that in order to combine two references to make an obviousness rejection, the Examiner must point to some specific teaching in the prior art that suggests to one of ordinary skill in the art to make the proposed combination. See In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999) ("the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references"... "examiner can satisfy the burden of obviousness...only by showing some objective teaching leading to the combination"). In the prior art of record, there is no objective teaching or suggestion leading to the combination of Marcoccia and Haugli.

The Examiner states that "it would have been obvious ... to replace the coaxial cable [sic] of Marcoccia with the single coaxial cable of Haugli to reduce the system hardware and installation cost." While it is true that Haugli states that "it is desirable from a cost installation and maintenance perspective to minimize the number of cables connecting the different units. The present invention would preferably use a single coaxial cable to pass RF and DC signals from the main electronics unit to the antenna unit," this reasoning does not necessarily apply to the system described in Marcoccia. As discussed above, Marcoccia discloses using separate coaxial cables to carry transmitted and received IF signals, respectively, between the indoor and outdoor units. Marcoccia makes absolutely no mention of carrying DC, control or power signals between the indoor and outdoor units over these (or any other) coaxial cables. Therefore, if the proposed combination is to carry both IF signals and DC signals over one of the coaxial cables of Marcoccia's system, the system would have to be modified to include additional circuitry to handle the DC signals, which would tend to increase, not decrease, costs. Further, there is absolutely no indication that there is any need or benefit in the Marcoccia system to provide DC signals over one of the coaxial cables. Thus, there is nothing in the art of record that would motivate one of ordinary skill in the art

to make this combination. Alternatively, if the proposed combination is to reduce the two IF carrying coaxial cables in the Marcoccia system to a single IF carrying coaxial cable, again there is no motivation to make this modification. Again, additional electronics would be needed to appropriately combine or multiplex the transmitted and received IF signals such that they can properly be transmitted over the same cable, and other components may also be necessary to prevent interference between the transmitted and received IF signals. Thus, the modification may tend to increase, rather than decrease, costs and complexity of the Marcoccia system. Contrary to the assertion in the Office Action, based on the prior art of record, there is nothing to suggest to one of ordinary skill in the art to combine the disclosures of Marcoccia and Haugli.

Even if one were to combine Marcoccia and Haugli, the combination fails to disclose or suggest Applicant's claimed invention. Specifically, Applicant's independent claim 9 recites "transmitting the control, power and RF signals between the indoor unit and the outdoor unit over the single coaxial cable" (emphasis added). As discussed above, Marcoccia discloses only IF signals being transmitted between the indoor and outdoor units over separate coaxial cables, and Haugli discloses only RF and DC signals being transmitted, over the same coaxial cable, between components of a satellite-based communication system. Therefore, any combination of Marcoccia and Haugli fails to disclose or suggest transmitting the control, power and RF signals between the indoor unit and the outdoor unit over the single coaxial cable, as is claimed in Applicant's claim 9.

Accordingly, the proposed combination of Marcoccia and Haugli discussed in the Office Action cannot render obvious Applicant's claim 9 because a) it is improper for lack of motivation to combine the references and b) the suggested combination does not disclose each and every limitation recited in Applicant's claim 9. Therefore, for at least these reasons, withdrawal of the rejection of claim 9 is respectfully requested.

Claims 10, 11 and 13 depend from claim 9 and are therefore allowable for at least the same reasons as discussed for claim 9. Accordingly, withdrawal of the rejection of claims 10, 11 and 13 is respectfully requested.

Newly Added Claims

Applicant has added new claims 15 - 30 to further define Applicant's contribution to the art.

Newly added dependent claims 15-19 depend from claim 9 and are therefore allowable for at least the same reasons as claim 9.

New independent claim 20 recites, "a method for communicating in a spread spectrum system comprising an indoor unit and an outdoor unit, the method comprising acts of transmitting a radio-frequency (RF) signal, a power signal and a control signal over a single coaxial cable coupled between the indoor unit and the outdoor unit, providing power to the outdoor unit with the power signal; and controlling at least some components of the outdoor unit with the control signal." As discussed above in reference to claim 9, the art of record does not disclose or suggest a method of providing an RF signal, a control signal and a power signal between an indoor unit and an outdoor unit over the same coaxial cable. Therefore, for at least this reasons, newly added claim 20 is patentable over the art of record.

Newly added dependent claims 21 - 26 depend from claim 20 and are therefore allowable for at least the same reasons as claim 20.

Newly added independent claim 27 recites "A spread spectrum communication system comprising an outdoor unit comprising an antenna and a receiver front end, an indoor unit comprising a processor and an RF module, the RF module including a transmitter circuit to generate transmit RF signals and a receiver circuit to process received RF signals, a coaxial cable coupled between the indoor unit and the outdoor unit, wherein the indoor unit is adapted to provide power signals, control signals, and the transmit RF signals for transmission by the antenna, to the outdoor unit over the coaxial cable; and wherein the outdoor unit is adapted to send the received RF signals to the indoor unit over the coaxial cable." As discussed above, the prior art of record does not disclose or suggest a system wherein RF, power and control signals are adapted to be transmitted between the indoor unit and the outdoor unit over a same coaxial cable. Therefore, for at least this reason, new independent claim 27 is patentable over the art of record.

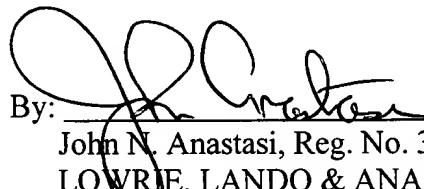
Newly added dependent claims 28 - 33 depend from independent claim 27 and are allowable for at least the same reasons as claim 27.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
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